

PERCEIVED RISK OVER HALAL AWARENESS: DRIVING HALAL SKINCARE PURCHASE INTENTION AMONG GEN Z MUSLIM WOMEN

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Abstrak

Pasar produk perawatan kulit halal telah berkembang pesat, didorong oleh meningkatnya kesadaran keagamaan dan kekhawatiran konsumen yang semakin tinggi terkait keamanan produk di kalangan populasi Muslim. Meskipun terjadi pertumbuhan ini, pemahaman akademis mengenai bagaimana kesadaran akan halal tercermin dalam sikap konsumen yang sebenarnya masih belum konsisten di berbagai studi empiris. Dengan mengacu pada Teori Perilaku Terencana (TPB), penelitian ini menyelidiki peran kesadaran akan halal dan persepsi risiko dalam membentuk sikap konsumen, serta niat beli terhadap produk perawatan kulit halal. Pendekatan kuantitatif digunakan, dengan data dikumpulkan dari 200 mahasiswi Muslim Generasi Z melalui kuesioner terstruktur yang diisi sendiri. Hubungan yang dihipotesiskan dievaluasi melalui Partial Least Squares Structural Equation Modelling (PLS-SEM). Temuan menunjukkan bahwa kesadaran halal tidak memiliki efek langsung yang signifikan terhadap sikap konsumen terhadap produk perawatan kulit halal, sedangkan risiko yang dirasakan menunjukkan pengaruh yang signifikan dan positif terhadap pembentukan sikap. Selain itu, sikap konsumen dikonfirmasi sebagai mediator signifikan yang menghubungkan risiko yang dirasakan dengan niat membeli. Hasil ini menyarankan bahwa di kalangan konsumen perempuan Muslim Generasi Z, kognisi terkait risiko memiliki relevansi perilaku yang lebih besar daripada pengetahuan agama dalam membentuk sikap positif terhadap produk perawatan kulit halal. Studi ini memperkaya literatur pemasaran halal dengan memperluas kerangka Teori Perilaku yang Direncanakan (TPB) melalui pengintegrasian risiko yang dirasakan sebagai prasyarat kunci, sekaligus menawarkan wawasan praktis bagi manajer merek dan pemasar yang beroperasi di sektor kosmetik halal.

Kata Kunci : niat beli; risiko yang dirasakan; kesadaran halal; sikap konsumen; Generasi Z

Abstract

The halal skincare market has expanded significantly, driven by increasing religiosity and heightened consumer concern over product safety among Muslim populations. Despite this growth, scholarly understanding of how halal awareness translates into actual consumer attitudes remains inconsistent across empirical studies. Drawing on the Theory of Planned Behaviour (TPB), this study investigates the roles of halal awareness and perceived risk in forming consumer attitudes and, subsequently, purchase intentions toward halal skincare products. A quantitative approach was employed, with data gathered from 200 Generation Z Muslim female university students using a structured self-administered questionnaire. Hypothesized relationships were evaluated through Partial Least Squares Structural Equation Modelling (PLS-SEM). Findings reveal that halal awareness exerts no significant direct effect on consumer attitudes toward halal skincare, whereas perceived risk demonstrates a significant and positive influence on attitude formation. Furthermore, consumer attitude was confirmed as a

significant mediator linking perceived risk to purchase intention. These results suggest that among Gen Z Muslim female consumers, risk-related cognition holds greater behavioral relevance than religious knowledge in cultivating favorable attitudes toward halal skincare. This study advances the halal marketing literature by broadening the TPB framework through the incorporation of perceived risk as a key antecedent, while offering actionable insights for brand managers and marketers operating in the halal cosmetics sector.

Keywords: purchase intention; perceived risk; halal awareness; consumer attitude; Z Generation

1. Introduction

Halal cosmetics and skincare have grown into a substantial market over the past decade, particularly in Muslim-majority countries like Indonesia, where halal compliance, product safety, and ethical consumption now inform purchasing decisions as standard criteria (Isa et al., 2023; Öztürk, 2022; Soeroto et al., 2023; Wisudanto et al., 2024). For Muslim consumers, halal skincare carries religious weight, shapes personal identity, and signals a way of life in which it is not a neutral product category (Briliana & Mursito, 2017; Zaki et al., 2021).

The halal cosmetics market in Indonesia is projected to grow at a Compound Annual Growth Rate (CAGR) of 9.1% during the period 2023–2030 (Inkwood Research, 2024). This acceleration is reinforced by Government Regulation No. 42 of 2024 concerning the Implementation of the Halal Product Assurance Sector, which mandates that all cosmetic products must have halal certification no later than 17 October 2026 (BPJPH, 2024). This regulatory mandate significantly restructures the competitive landscape of the national skincare industry, while also underscoring the urgency of investigating the driving factors behind halal product purchasing behavior among Generation Z as the dominant consumer segment in the era of the halal market ecosystem (Afendi & Indriani, 2022; Z. Khan et al., 2026; Rokhmah et al., 2025).

The dominant theoretical framework for studying halal consumer behavior is the theory of planned behavior (TPB), which positions attitude as the most proximal cognitive antecedent of behavioral intention (Ajzen, 1991). Across the food, personal care, and cosmetics categories, attitude has proven to be the most consistent predictor of halal purchase intention a finding that holds across Muslim-majority and Muslim-minority markets (Yener, 2015; Briliana & Mursito, 2017; Ahmadova & Aliyev, 2021; Islam, 2022). Prior TPB-based models in halal marketing have focused primarily on halal awareness as the main upstream antecedent of attitude, supported by consistent evidence that consumers who understand halal standards tend to form more favorable evaluations of halal. (Aziz & Chok, 2013; Öztürk, 2022; Pratama et al., 2023; Aslan, 2023).

Despite the breadth of the literature, two gaps remain. First, the halal awareness attitude relationship has been tested predominantly on general Muslim consumer samples. Among Generation Z consumers, who grew up after widespread halal certification had become a standard practice in Indonesia, the assumption that variance in awareness drives variance in attitude deserves scrutiny. When halal certification is a baseline expectation rather than an evaluated feature, awareness-only models may reach an explanatory ceiling (Aziz & Chok, 2013; Nusran et al., 2018; Sahir et al., 2021; Afisa & Andni, 2024). Second, perceived risk although theoretically positioned as a belief-based antecedent to attitude within TPB remains inconsistently operationalized and tested in halal skincare research. Prior studies on halal food and general cosmetics report a negative perceived risk–attitude relationship (Elseidi, 2018; Miftahuddin et al., 2022; Öztürk, 2022), yet this assumption

has not been sufficiently examined in the skincare category specifically among Generation Z consumers, whose risk-processing orientation may differ fundamentally from older cohorts. Perceived risk is a significant factor. Concerns about non-halal ingredients, health risks, psychological risk, quality risk, and fraudulent halal claims ((Al-Ansi et al., 2019; Forsythe et al., 2006; Iriani & Andjarwati, 2020; Miftahuddin et al., 2022; Olya & Al-ansi, 2018; Öztürk, 2022).

This study addresses both gaps by testing a TPB-based model with halal awareness and perceived risk as belief-based antecedents to attitude and attitude as the mediating variable linking these antecedents to purchase intention in a sample of Generation Z Muslim female university students at Islamic universities in Indonesia. This study contributes to halal marketing theory in three specific ways. It provides empirical evidence on whether halal awareness retains predictive power over attitudes in a population where halal consciousness is nearly universal. It tests the directional assumption of perceived risk, that is, whether risk elevates or suppresses attitude formation in this segment. It also documents the full mediating structure through which perceived risk operates on purchase intention in this cohort. Collectively, these contributions challenge the transferability of assumptions built on older consumer populations to the Generation Z segment of halal skincare consumers.

In addition to its theoretical contributions, this study also offers practical benefits for marketing communication strategies in halal products, particularly halal skincare, where risk considerations influence the purchase of skincare products, indicating what business actors need to present in their marketing efforts to convince Generation Z in making decisions to purchase halal skincare.

2. Literature Review

Theory of Planned Behaviour (TPB)

The Theory of Planned Behavior, (Ajzen, 1991) holds that behavioural intention is the most direct predictor of actual behaviour, itself determined by three constructs: attitude toward the behaviour, subjective norms, and perceived behavioural control. In halal consumption research, the TPB has accumulated extensive empirical applications since the early 2010s. Lada et al., (2009) were among the first to apply the framework to halal product choices, finding that attitude and subjective norms significantly predicted halal purchase intention in Malaysia. Subsequent work has confirmed the robustness of this structure across food Setiawati & Syahrivar, 2019; Alam & Sayuti, 2011), cosmetics, and personal care categories (Aisyah, 2016; Ansari & Mohammed, 2015; Briliana & Mursito, 2017; Fiandari & Andharini, 2024; Haque et al., 2018).

Extensions of the basic TPB model have incorporated halal-specific constructs such as halal literacy (Bhutto et al., 2022; A. Khan et al., 2022a), religiosity (Mega Setiawati & Syahrivar, 2019; Nawaz et al., 2024), perceived risk (Aslan, 2023; Miftahuddin et al., 2022; Öztürk, 2022), and brand trust (Al-Ansi et al., 2019; Aslan, 2023; Koc et al., 2024; Usman et al., 2024). Across this body of literature, attitude consistently emerges as the strongest and most reliable predictor of halal purchase intention

Halal studies have predominantly focused on halal awareness and halal certification among general consumers and across various product categories, while empirical evidence on halal skincare among Generation Z remains limited. Moreover, the relationship between perceived risk and attitude remains inconclusive. Several studies report a negative effect of perceived risk on attitudes toward halal products (Elseidi, 2018;

Miftahuddin et al., 2022; Öztürk, 2022), whereas recent evidence suggests that perceived risk may stimulate information seeking and strengthen product evaluation among digitally engaged young consumers (Anubha, 2023; Irfany et al., 2023). Addressing these gaps, this study examines the effect of perceived risk on attitudes and its implications for halal skincare purchase intention among Generation Z Muslim female university students in Indonesia. This study extends the TPB by conceptualising perceived risk as a potential trigger for information processing rather than merely a barrier to halal consumption.

Halal Awareness and Attitude Toward Halal

Halal awareness reflects consumers' knowledge and consciousness of halal principles, certification, and compliance. Prior studies have reported that halal awareness positively affects purchase intentions for halal food (Akın & Okumuş, 2020; Aziz & Chok, 2013; Bashir, 2020; Febriandika et al., 2023; Usman et al., 2024) and cosmetics or skincare (Haidi et al., 2022; Irfany et al., 2023; Nawaz et al., 2024; Zaki et al., 2021). Previous Studies related to halal awareness among Generation Z show a significant and consistent influence on purchase intentions, both for food products (Febriandika et al., 2023) and cosmetic or skin care products (Haidi et al., 2022; Irfany et al., 2023; Nawaz et al., 2024; Zaki et al., 2021), indicating that young people, especially Gen Z, make purchasing decisions based on high halal awareness. According to (Malodia et al., 2017; Spears & Singh, 2004), purchase intention is a strong tendency for consumers to buy certain products. A person's purchase intention is influenced by the results of product evaluation in terms of benefits and costs during the product information search process (Hidayah & Lestari, 2025; Konuk, 2015; Widyanto & Sitohang, 2022), whether the evaluation is positive or negative, which is an attitude towards the product. The more positive a person's attitude towards a product, the higher their intention to buy it. In the context of this study, Generation Z felt an attitude towards halal skincare products when evaluating them. Therefore, the hypothesis made by the researcher is

H1: Halal awareness significantly influences attitude toward halal skincare

Perceived Risk and Attitude toward Halal

Perceived risk is "consumer perceptions of uncertainty and negative consequences that may be received from purchasing a product or service" (Yeung & Morris, 2006). Consumers tend to avoid mistakes when evaluating products to purchase to obtain benefits (V. W. Mitchell & McGoldrick, 1996; V.-W. Mitchell, 1999). Bauer (1960) states that people tend to avoid risks in complex situations. Based on the above explanation, consumers tend to avoid high-risk or complex purchasing situations to obtain more benefits. In cosmetic and skincare contexts, perceived risk includes health, safety, and ingredient-related concerns. Previous studies related to perceived risk in halal products have mostly focused on halal food products, with results showing an influence on attitudes toward halal products (Akın & Okumuş, 2020; Öztürk, 2022; Usman et al., 2024; Yener, 2015). Meanwhile, for research on halal skincare products, there have not been many previous studies discussing the relationship between perceived risk and attitudes toward halal. However, other studies show that when choosing cosmetics or other personal care products, young consumers consider whether the product has a positive effect on their skin and check whether the product's ingredients are harmful to their skin health and whether they provide beauty benefits for them (Anubha, 2023; Briliana & Mursito, 2017; Handriana et al., 2020; Mohd Suki & Mohd Suki, 2018). The

above explanation shows that risk factors such as health, social status, and product cost are believed by researchers to be considerations for Generation Z in forming positive or negative attitudes towards halal products..

H2: Perceived risk significantly influences attitude toward halal skincare

Attitude Toward Halal and Purchase Intention

The attitude toward halal products represents consumers' overall evaluation of purchasing and using halal-certified products. Jika melihat penjelasan dari teori Consistent with TRA, numerous studies across SINTA and Scopus journals report that positive attitudes significantly enhance purchase intention for halal cosmetics and skincare (Ahmadova & Aliyev, 2021; Akın & Okumuş, 2020; Briliana & Mursito, 2017; Suhartanto et al., 2021; Yener, 2015). Attitude also functions as a mediating variable that translates belief-based constructs such as perceived risk into behavioral intention (Anubha, 2023; Fiandari & Andharini, 2024; Garg & Joshi, 2018; Mukhtar & Butt, 2012; Pratama et al., 2023)

H3: Attitude toward halal skincare significantly influences purchase intention.

H4: Attitude toward halal skincare mediates the relationship between halal awareness and purchase intention.

3. Research Methods

This study employed a quantitative research design. Its primary objective was to examine the influence of Halal Awareness (HA) and Perceived Risk (PR) on the Halal Products Purchase Intention (HPI), with attitude toward halal (ATH) serving as a mediating variable. The context of this study is Muslim female consumers within the environment of an Islamic university in Indonesia, where religious identity and halal awareness are highly prominent (Ambali & Bakar, 2014; Lada et al., 2009).

The target population consisted of female undergraduate students enrolled at an Islamic-based university in Indonesia. Muslim female students were selected as the study population based on empirical evidence indicating that women demonstrate higher involvement in decision-making regarding halal skincare/cosmetic products (Osman et al., 2022; Widyanto & Sitohang, 2022; Zaki et al., 2021). The context of an Islamic university was chosen to ensure a religiously homogeneous sample, thereby reducing the potential for confounding variations in religious commitment and halal literacy (Bhutto et al., 2022; Isa et al., 2023; A. Khan et al., 2022b).

This single-institution design was intentionally chosen to ensure internal homogeneity isolating the relationship between awareness and attitudes from cross-institutional variations in religiosity at the expense of external generalizability. Because respondents were exclusively drawn from one Islamic university in East Java, these findings reflect religiously homogenous Gen Z Muslim women in similar institutional settings, rather than Indonesian Gen Z Muslim consumers at large, non-Islamic university students, male consumers, or Muslim populations in other national contexts.

To address potential Common Method Bias (CMB), this study implemented both procedural controls and statistical evaluations (Podsakoff et al., 2024). Procedurally, the questionnaire was administered in-person during classroom breaks, incorporating respondent anonymity, informed consent, item randomization, and neutral wording to

mitigate social desirability bias. Statistically, a full collinearity VIF test was conducted on the inner SEM-PLS model (Kock, 2015). The resulting VIF values (1.000–1.673) fall well below the 3.3 threshold, confirming that the research model is free from both multicollinearity and CMB.

Table 2 VIF Inner Model

	VIF
Attitude Toward Halal -> Halal Purchase Intention	1.000
Halal Awareness -> Attitude Toward Halal	1.673
Perceived Risk -> Attitude Toward Halal	1.673

Source: SmartPLS 4.0 output (2025).

The sampling technique used in this study involved a purposive sample based on the following criteria: (1) Muslim female students currently enrolled in an undergraduate program with experience and knowledge regarding the purchase of halal-certified skincare products. This sampling technique is appropriate for research targeting a specific population with identifiable characteristics (Sekaran & Bougie, 2016).

A total of 200 respondents were included in the study. The adequacy of this sample size was justified using several criteria. First, in PLS-SEM, the sample size is determined based on the recommendation of (J. F. Hair et al., 2014; Jr., J. F. Hair et al., 2022), which is a minimum of 5–10 times the number of indicators. With 20 indicators, the required sample size was $n = 200$ (20×10). Second, according to the proposal by Kock and Hadaya (2018), using the root of the square method, a minimum of 74 respondents is required to detect a moderate effect at an 80% power level ($\alpha = 0.05$), further confirming the adequacy of $n = 200$. Third, by applying (Cohen, 1992) power analysis for a moderate effect size ($f^2 = 0.15$) with three predictors at $\alpha = 0.05$, the recommended minimum sample size is 119, which exceeds the current sample. The above criteria clearly indicate that $n = 200$ is statistically sufficient for a robust SEM-PLS estimation.

Survey data were collected through a structured questionnaire distributed online and offline using Google Forms, with all items rated on a five-point Likert scale (1 = Strongly Disagree, 5 = Strongly Agree). Four constructs were measured (Table 1).

.Table 2 Research Constructs and Measurement Items

Variable	Measurement	Source
Halal Awareness	H1: Using halal products is a religious obligation	(Osman et al., 2022; Wisudanto et al., 2024)
	H2: I understand that as a Muslim, I must use halal products	
	H3: I am aware that I must use halal skincare products	
	H4: It is very important to choose skincare products with a halal logo	
Halal Perceived Risk	Health risk	(Al-Ansi et al., 2019; Olya & Al-ansi, 2018)
	HR1: I am concerned about the risks to my health if I do not use halal products	
	HR2: I am concerned that using non-halal skincare products is dangerous	
	Quality risk	
	QR1: I am concerned about the quality of skincare products if they are not halal	
	QR2: I am concerned if halal standards are not met	
	Psychological risk	

	PR1: Non-halal skincare makes me anxious	
	PR2: Non-halal skincare makes me feel psychologically uncomfortable	
Attitude Toward Halal	ATT1: I think using halal skincare is a great lifestyle choice for me	
	ATT2: I think using halal skincare shows that I am a true Muslim	(Aslan, 2023; Osman et al., 2022)
	ATT3: Using halal skincare makes me feel more comfortable and confident	
	ATT4: For me, choosing halal skincare products is a Muslim's duty	
Halal Purchase Intention	HPI1: I will regularly purchase halal skincare products in the future	
	HPI 2: I will purchase halal skincare products if they are offered to me	
	HPI 3: I will purchase skincare products that bear the halal logo	(Aslan, 2023)
	HPI 4: I am willing to wait until halal skincare products become available in the stores/online/offline and will not purchase non-halal skincare products	

Source: Adapted from Osman et al. (2022); Wisudanto et al. (2023); Aslan (2023); Olya (2018); Al Ansi et al. (2019)

4. Result and Discussion

Respondent Profile

Table 3. Respondent Profile Summary (n = 200)

Characteristic	n	%
Age (years)		
17–20	99	49.5
21–23	91	45.5
≥ 24	10	5.0
Domicile		
East Java	198	99.0
Outside East Java	2	1.0
Educational Status		
Undergraduate (active)	186	93.0
Postgraduate (active)	3	1.5
Graduated	11	5.5
Year of Study		
1st–2nd semester	39	19.5
3rd–4th semester	35	17.5
5th–6th semester	48	24.0
≥ 7th semester (active)	67	33.5
Graduated / inactive	11	5.5
Current Residence		
Parents' home	114	57.0
Boarding house (kos)	71	35.5
Rented house	8	4.0
Relative's home	7	3.5

Dedicated Skincare Budget Allocation		
Yes, specifically budgeted	159	79.5
No specific allocation	41	20.5
Primary Income Source for Skincare Purchases		
Family allowance (parents)	127	63.5
Part-time salary / fee	60	30.0
Own business income	10	5.0
Scholarship funds	3	1.5
Average Monthly Skincare Expenditure (IDR)		
< 300,000	99	49.5
300,000 – < 500,000	73	36.5
500,000 – < 750,000	16	8.0
750,000 – < 1,000,000	8	4.0
≥ 1,000,000	4	2.0
Awareness of Halal Certification Label on Skincare		
Aware	187	93.5
Not aware	13	6.5
Origin of Skincare Products Used		
Domestic (Indonesian brand)	178	89.0
Imported (foreign brand)	22	11.0
Purchase Channel		
Marketplace only (Shopee, Tokopedia, Lazada, etc.)	91	45.5
Physical store only	55	27.5
Physical store + marketplace	37	18.5
Multi-channel (physical store, marketplace, and/or social media)	17	8.5
Skincare Purchase Frequency		
Less than once a month	90	45.0
Every 1–2 months	70	35.0
Every 2–3 months	33	16.5
Every > 3 months	7	3.5
Total	200	100.0

Source: Primary data processed (2025).

Table 3 indicates that respondents were predominantly aged 17–20 years (49.5%), undergraduates (93.0%), and domiciled in East Java (99.0%). Most lived with their parents (57.0%), allocated a specific skincare budget (79.5%), and relied on family allowances (63.5%). Nearly half spent less than IDR 300,000 per month on skincare (49.5%), while 93.5% were aware of halal certification and 89.0% used domestic brands. Overall, the sample represents young consumers with high halal-label awareness and relatively modest skincare expenditure.

SEM PLS Result

Data analysis was conducted using Partial Least Squares Structural Equation Modeling (PLS-SEM) with the the SmartPLS 4.0 software (Henseler et al., 2012). PLS-SEM was chosen for several reasons. First, PLS-SEM is suitable for exploratory and predictive research involving complex structural models, as is the case in this study (Hair et al., 2023; Hair et al., 2022). Second, this method is suitable for relatively small to medium sample sizes and does not require the assumption of multivariate normality (Hair et al., 2023; Hair et al., 2022; Sarstedt & Liu, 2024). Third, this model includes a reflective measurement structure for all four constructs, which aligns with the strength of PLS-SEM

in handling reflective indicators (Hair et al., 2023; Hair et al., 2022).

This analysis followed the two-stage approach recommended by Hair et al (2023) and Hair et al (2022). In the first stage, the measurement model (outer model) was evaluated for reliability and validity. In the second stage, the structural model (inner model) was evaluated for path coefficients, predictive relevance, and effect sizes. Bootstrapping with 5,000 resamples was used to generate standard errors and t-statistics for hypothesis testing (Hair et al., 2023; Hair et al., 2022)..

The measurement model was assessed in accordance with the criteria established by Hair et al (2023) for reflective constructs. As shown in Table 4, all outer loadings exceeded the recommended threshold of 0.70, confirming adequate indicator reliability (Hair et al., 2023; Hair et al., 2022).. The Average Variance Extracted (AVE) values ranged from 0.701 (Halal Purchase Intention) to 0.902 (Perceived Risk), all surpassing the minimum threshold of 0.50, as recommended by Fornell and Larcker (1981), thus establishing convergent validity. Composite Reliability (ρ_a) values ranged from 0.883 to 0.936, exceeding the accepted threshold of 0.70 (Hair et al., 2023; Hair et al., 2022), confirming internal consistency reliability across all constructs.

Table 4 . Outer Loadings, AVE, and Composite Reliability

Variabel	Item	Outer Loading	AVE	Composite Reliability
Halal Awareness	HA1	0.868	0.826	0.936
	HA2	0.936		
	HA3	0.942		
	HA4	0.888		
Perceived Risk	HR1	0.750	0.902	0.902
	HR2	0.764		
	QR1	0.861		
	QR2	0.715		
	PR1	0.857		
	PR2	0.806		
Attitude Toward Halal	ATT1	0.793	0.731	0.899
	ATT2	0.836		
	ATT3	0.916		
	ATT4	0.870		
Halal Purchase Intention	HPI1	0.885	0.701	0.883
	HPI2	0.680		
	HPI3	0.858		
	HPI4	0.908		

Note: All outer loadings > 0.70; AVE > 0.50; Composite Reliability > 0.70.

Source: SmartPLS 4.0 output (2025).

Discriminant Validity

Discriminant validity was established using multiple complementary criteria (Hair et al., 2023; Hair et al., 2022; Henseler et al., 2012). As presented in Table 5, all Heterotrait-Monotrait (HTMT) ratios fell below the conservative 0.85 threshold, confirming the empirical distinctiveness of each construct. The highest HTMT value was observed between Attitude Toward Halal and Halal Purchase Intention (0.811). This strong yet distinct association aligns with the Theory of Planned Behavior (Ajzen, 1991), which posits attitude as a key cognitive antecedent of intention. Discriminant validity was further supported by the Fornell–Larcker criterion and the absence of indicator cross-loadings (J. F. Hair et al., 2023). Although these metrics confirm structural separation,

the HTMT value of 0.811 represents a moderate boundary that warrants monitoring in future replication studies..

Table 5 . HTMT Discriminant Validity Matrix

Construct	ATH	HA	HPI	PR
Attitude Toward Halal (ATH)	—			
Halal Awareness (HA)	0.403	—		
Halal Purchase Intention (HPI)	0.811	0.432	—	
Perceived Risk (PR)	0.462	0.703	0.575	—

Note: All HTMT values < 0.85 (Henseler et al., 2015).

Source: SmartPLS 4.0 output (2025)

Second, the Fornell-Larcker criterion was applied. Table 6 presents the square root of AVE for each construct on the diagonal compared with off-diagonal correlations. Consistent with Fornell and Larcker (1981), the square root of AVE for each construct (ATH = 0.855; HA = 0.909; HPI = 0.837; PR = 0.794) exceeded its highest correlation with any other construct, further confirming discriminant validity.

Table 6. Fornell-Larcker Criterion (Square Root of AVE on Diagonal)

Construct	ATH	HA	HPI	PR
Attitude Toward Halal (ATH)	0.855			
Halal Awareness (HA)	0.374	0.909		
Halal Purchase Intention (HPI)	0.725	0.395	0.837	
Perceived Risk (PR)	0.426	0.634	0.519	0.794

Note: Diagonal values represent the square root of AVE.

Source: SmartPLS 4.0 output (2025).

Structural Model Evaluation

Coefficient of Determination (R^2) and Effect Size (f^2)

The structural model was evaluated following Hair et al. (2022) criteria (Table 7). Halal Awareness and Perceived Risk collectively explained 19.9% of the variance in Attitude Toward Halal $R^2 = 0.199$, representing a weak-to-moderate effect. Rather than indicating a statistical shortcoming, this value reflects the specific isolated nature of these antecedents within consumer behavior research; unexamined external factors like subjective norms and brand trust account for the remaining variance, as modeled in the Theory of Planned Behavior (Ajzen, 1991; Chin, 1998; Handriana et al., 2020). Practically, this underscores that cultivating positive consumer attitudes requires holistic marketing strategies beyond basic awareness campaigns. Conversely, the model demonstrated robust predictive accuracy for Halal Purchase Intention $R^2 = 0.526$, reflecting a moderate-to-substantial effect (Chin, 1998; Hair et al., 2022) that confirms attitude's dominant role in driving intention once established.

Table 7 Coefficient of Determination (R^2)

Construct Endogen	R^2	R^2 Adjusted	Category
Attitude Toward Halal	0.199	0.191	Weak
Halal Purchase Intention	0.526	0.523	Substantial

Note: $R^2 > 0.50$ = substantial; $R^2 > 0.25$ = moderate; $R^2 > 0.10$ = weak (Hair et al., 2022).

Source: SmartPLS 4.0 output (2025).

Effect sizes (f^2) were computed to assess the practical contribution of each predictor construct to the endogenous variables, as recommended by Cohen, (1992) and Jr. , J. F. Hair et al., (2022). As reported in Table 8, Attitude Toward Halal exerted a large effect on Halal Purchase Intention ($f^2 = 1.109$), whereas Halal Awareness ($f^2 = 0.023$) and Perceived Risk ($f^2 = 0.074$) demonstrated small effects on Attitude Toward Halal.

According to Cohen's (1988) benchmarks (0.02 = small; 0.15 = medium; 0.35 = large), these results suggest that Attitude Toward Halal is the dominant driver of purchase intention in this model.

Table 8. Effect Size (f^2)

Relationships Among Constructs	f^2	Category
Attitude Toward Halal → Halal Purchase Intention	1.109	Large
Halal Awareness → Attitude Toward Halal	0.023	Small
Perceived Risk → Attitude Toward Halal	0.074	Small

Note: $f^2 \geq 0.35$ = large; ≥ 0.15 = medium; ≥ 0.02 = small (Cohen, 1988).

Source: SmartPLS 4.0 output (2025).

Model Fit Assessment

The overall model fit was evaluated following the recommended indices for PLS-SEM (Hair et al., 2024; Henseler et al., 2015). The Standardized Root Mean Square Residual (SRMR) value of 0.069 falls well below the conservative threshold of 0.080 (and the general limit of 0.100), confirming an acceptable model fit and the absence of model misspecification (Hair et al., 2024). Although the Normed Fit Index (NFI) of 0.832 is marginally below the ideal benchmark of 0.900, this is a known characteristic of PLS-SEM. Unlike CB-SEM, NFI in composite-based modeling tends to be systematically downward-biased because it does not adjust for degrees of freedom (Henseler et al., 2014; Schuberth et al., 2023). Consequently, NFI should not be relied upon as the sole criterion; priority should be given to SRMR and the model's predictive capacity (Hair et al., 2024; Sarstedt et al., 2025). Collectively, these metrics confirm a satisfactory fit for this four-construct reflective model.

Table 9. Model Fit Indices

Indicator	Value (Saturated)	Value (Estimated)	Threshold	Description
SRMR	0.069	0.090	< 0.10	Fit
d_ULS	0.816	1.383	—	—
d_G	0.387	0.412	—	—
Chi-square	460.365	482.185	—	—
NFI	0.832	0.824	> 0.90 (ideal)	Marginal

Note: SRMR < 0.10 indicates acceptable fit (Hair et al., 2022; Hu & Bentler, 1999).

Source: SmartPLS 4.0 output (2025).

Hypothesis Testing

Direct Effects

Hypothesis testing was conducted using bootstrapping with 5,000 resamples at a significance level of $\alpha = 0.05$ (two-tailed), following (Hair et al., 2022). Table 10 presents the results of the direct path coefficient test. H1 posits that Attitude Toward Halal positively influences Halal Purchase Intention. The results reveal a strong, positive, and statistically significant relationship ($\beta = 0.725$, $t = 12.414$, $p < 0.001$), providing robust support for H1. This finding is consistent with the Theory (Ajzen, 1991), which positions attitude as a primary antecedent of behavioural intention, and with prior halal marketing literature. H2 examines the relationship between Halal Awareness and Attitude Toward Halal. The path coefficient was positive but not statistically significant ($\beta = 0.175$, $t = 1.422$, $p = 0.155$), failing to support H2. This result suggests that in the present sample of Islamic university students, who may already possess a uniform level of halal awareness, additional variance in awareness does not produce a differentiating effect on attitude. This finding is further discussed in Section 5. H3 proposes that Perceived Risk significantly

influences attitudes toward halal. The results demonstrated a significant positive effect ($\beta = 0.315$, $t = 3.278$, $p = 0.001$), supporting H3. This finding aligns with risk reinforces positive attitudes toward halal products.

Table 10. Hypothesis Testing — Direct Effects

Hypothesis / Path	β (O)	M	STDEV	T-Statistic	P-Value	Keputusan
Halal Awareness → Attitude Toward Halal	0.175	0.187	0.123	1.422	0.155	Not Supported
Perceived Risk → Attitude Toward Halal	0.315	0.319	0.096	3.278	0.001	Supported ***
Attitude Toward Halal → Halal Purchase Intention	0.725	0.731	0.058	12.414	0.000	Supported ***

Note: *** $p < 0.001$; ** $p < 0.01$; * $p < 0.05$. β = path coefficient; M = sample mean; STDEV = standard deviation.

Source: SmartPLS 4.0 output.

Mediation Analysis (Indirect Effects)

The mediating role of Attitude Toward Halal was tested using the specific indirect effects procedure with bootstrapped confidence intervals, following (Hair et al., 2022; Hayes & Preacher, 2014). Table 11 presents the indirect effect results. H4 tested whether Attitude Toward Halal mediates the relationship between Halal Awareness and Halal Purchase Intention. The specific indirect effect was positive but non-significant ($\beta = 0.127$, $t = 1.370$, $p = 0.171$), indicating no significant mediation. This is consistent with the non-significant direct path from Halal Awareness to Attitude Toward Halal (H2), reflecting that the absence of mediation is a logical consequence of the weak primary relationship. H5 examines whether Attitude Toward Halal mediates the relationship between Perceived Risk and Halal Purchase Intention. The indirect effect is positive and statistically significant ($\beta = 0.228$, $t = 3.025$, $p = 0.002$), supporting H5 and confirming the mediating role of Attitude Toward Halal. Consistent with Baron & Kenny (1986) mediation logic, this finding implies that Perceived Risk enhances halal purchase intention primarily through the formation of a more positive attitude toward halal products, rather than a direct behavioural path.

Table 11. Hypothesis Testing - Indirect Effects / Mediation Analysis

Indirect Effect Path	β (O)	M	STDEV	T-Statistik	P-Value	Result
H4: HA → ATH → HPI	0.127	0.137	0.092	1.370	0.171	Not Supported
H5: PR → ATH → HPI	0.228	0.234	0.075	3.025	0.002	Supported ***

Note: *** $p < 0.001$; ** $p < 0.01$; * $p < 0.05$. Bootstrap with 5,000 resamples.

Source: SmartPLS 4.0 output.

Summary of Hypothesis Testing

Table 12 summarizes the outcomes of the five hypotheses. H1 and H3 were supported, whereas H2 was not supported. H5 (mediation via Attitude Toward Halal from Perceived Risk to Purchase Intention) was supported, whereas H4 (mediation via Attitude from Halal Awareness) was not supported.

Table 12 Summary of Hypothesis Testing Results

H	Hypothesis	β	p-value	Result
H1	Halal Awareness → Attitude Toward Halal	0.175	0.155	Not Supported
H2	Perceived Risk → Attitude Toward Halal	0.315	0.001	Supported
H3	Attitude Toward Halal → Halal Purchase	0.725	0.000	Supported

	Intention			
H4	HA → ATH → HPI (Mediation)	0.127	0.171	Not Supported
H5	PR → ATH → HPI (Mediation)	0.228	0.002	Supported

Source: SmartPLS 4.0 output, processed (2025)

Halal Awareness and Attitude toward Halal Skincare

The results indicate that halal awareness does not significantly influence attitudes toward halal skincare among Gen Z Muslim consumers (H1 not supported). While this finding diverges from earlier studies reporting a positive relationship (Aziz & Chok, 2013; Bashir, 2020; Öztürk, 2022), it aligns with Afisa & Andni (2024) and Nusran et al (2018), who noted that awareness does not automatically translate into more positive attitudes among younger Muslim consumers. The respondent profile offers a plausible structural explanation: 93.5% of the participants reported an awareness of halal certification labels on skincare products. In a sample where halal awareness is already near-universal, there is insufficient variance in the predictor to differentiate individual attitudes, a pattern consistent with the cognitive ceiling effect ((Nusran et al., 2018).

This finding also reflects the growing “skintellectual” mindset among Gen Z consumers, who evaluate skincare products based on ingredient safety, scientific evidence, and effectiveness verified by fellow users, rather than certification status (Hermans, 2020; QUADPACK, 2022). Furthermore, safe and effective skincare for their skin impacts the beauty they need to showcase on social media platforms like Instagram, TikTok, and others that have become current trends among Gen Z (Patterson, 2024)

In Indonesia’s increasingly regulated halal market, halal certification has become a baseline expectation a hygiene factor whose absence disqualifies a product, but whose presence alone is insufficient to generate a more positive attitude (HDC Global, 2023). What matters more to this group is the depth and quality of the skincare product information available to them, not their level of awareness regarding halal principles. This finding has broader theoretical implications: in a population where halal awareness has reached a saturation point, awareness-based models may have reached the limits of their explanatory power.

Perceived Risk and Attitude toward Halal Skincare

The most substantive finding of this study is the significant positive effect of perceived risk on attitudes toward halal skincare (H2 supported), which runs counter to the negative relationship reported in prior studies (Elseidi, 2018; Miftahuddin et al., 2022; Öztürk, 2022) Rather than suppressing attitudes, perceived risk appears to function as a motivational trigger for more intensive cognitive engagement. When Gen Z consumers perceive risks related to halal skincare whether concerning non-halal ingredients, health and safety, or the credibility of certification claims their first response is not avoidance but investigation: scrutinizing ingredient lists, consulting trusted *skinfluencers* on social media, and comparing product formulations (Irfany et al., 2023). This risk-driven information search deepens the understanding of both product quality and halal compliance, which ultimately produces a more informed and consolidated positive attitude toward products that survive critical scrutiny.

Within the TPB framework, this finding is coherent: perceived risk constitutes a belief-based input that shapes behavioral attitude (Ajzen, 1991). When consumers perceive meaningful risks concerning ingredient safety, halal integrity, or product quality, these beliefs do not simply suppress attitude; they direct attention toward halal-compliant alternatives and motivate a more deliberate evaluation of available options. In a

population already oriented toward halal consumption, this evaluative process tends to resolve in favor of certified products, producing a more positive and consolidated attitude rather than avoidance. This dynamic is consistent with the TPB's proposition that stronger and more accessible beliefs produce more pronounced attitudinal effects (Ajzen, 1991, 2010)

This finding challenges the transferability of risk-aversion assumptions derived from older consumer cohorts and calls for a re-examination of how perceived risk is conceptualized in halal marketing models targeting younger Muslim consumers. Future studies could explore the boundary conditions of this positive effect for instance, whether it holds across different product risk types (health, quality, psychological) or under varying levels of digital media literacy.

Attitude toward Halal Skincare and Purchase Intention

Consistent with TPB and the broader halal marketing literature, attitude toward halal skincare exerts a strong positive effect on purchase intention (H3 supported; $\beta = 0.725$, $p < 0.001$), reaffirming attitude as the most proximal cognitive predictor of halal buying behavior (Ajzen, 1991; Briliana & Mursito, 2017; Zaki et al., 2021). The large effect size ($f^2 = 1.109$) underscores the centrality of attitude in this model and is consistent with prior evidence that among Muslim consumers, positive evaluations of halal products translate reliably into stated purchase intentions. Notably, the attitude formed by Gen Z consumers in this study was not a passive or label-driven evaluation; it was the product of an active information-seeking and experiential verification process triggered, in part, by perceived risk. Within the TPB, attitudes formed on the basis of salient and accessible beliefs such as those activated by perceived risk are expected to predict intention more reliably than attitudes built on routine or low-involvement evaluations (Ajzen, 1991).

Mediating Role of Attitude: Full Mediation of Perceived Risk on Purchase Intention

The full mediation pattern (H5 supported; $\beta = 0.228$, $p = 0.002$) provides the most mechanistically complete account of how perceived risk affects purchase intention in this sample. The non-significant direct path from perceived risk to purchase intention (when attitude is included) indicates that risk does not translate into buying decisions on its own; it does so exclusively by shaping attitude. This structure is fully consistent with TPB's sequential model: perceived risk, as a belief-based antecedent, shapes attitude, and attitude, as the most proximal cognitive predictor, drives intention (Ajzen, 1991). The contrast with H4 is equally informative: because halal awareness does not significantly predict attitude in this sample, there is no attitude-based mediation pathway to activate. Thus, the absence of mediation for halal awareness (H4 not supported) is not an anomaly, but a structural consequence of the ceiling effect identified in H1.

The full mediation pattern (H5 supported; $\beta = 0.228$, $p = 0.002$) provides the most mechanistically complete account of how perceived risk operates on purchase intention in this sample. The non-significant direct path from perceived risk to purchase intention (when attitude is included) indicates that risk does not translate into buying decisions on its own — it does so exclusively by shaping attitude. This structure is fully consistent with TPB's sequential model: perceived risk, as a belief-based antecedent, shapes attitude; and attitude, as the most proximal cognitive predictor, drives intention (Ajzen, 1991). The contrast with H4 is equally informative: because halal awareness does not significantly predict attitude in this sample, there is no attitude-based mediation pathway to activate. The absence of mediation for halal awareness (H4 not supported) is thus not an anomaly but a structural consequence of the ceiling effect identified in H1.2

This study provides significant managerial and policy implications. For halal skincare brand managers, the finding that managed risk perception triggers positive attitudes and purchase intentions indicates that conventional awareness campaigns (such as displaying the halal logo or generic religious messaging) have limited marginal efficiency. Therefore, resource allocation should be redirected toward risk-mitigation-based communication through verified ingredient transparency, integration of BPJPH certification tracking features on e-commerce platforms, and evidence of dermatological safety delivered via short videos by relevant content creators (Irfany et al., 2023; Patterson, 2024). For policymakers, the implementation of mandatory halal certification for cosmetics (PP No. 42 of 2024) is a timely opportunity to provide publicly accessible verification tools for Gen Z consumers. This is crucial because the research results demonstrate that the verifiability of claims not merely certification status is the primary factor that shifts risk perception into attitudes and purchasing decisions.

5. Conclusion

This study provides new insights into the determinants of halal skincare purchase intention among Generation Z Muslim female students. Contrary to the conventional assumption that halal awareness is a key determinant of halal consumption, the findings show that it does not significantly influence either attitude or purchase intention. This result suggests a potential ceiling effect, whereby halal awareness has become sufficiently established among highly educated young Muslim consumers and therefore provides limited additional explanatory power. In contrast, perceived risk positively influences attitude, indicating that risk may stimulate information seeking and more careful product evaluation rather than simply discourage consumption. These findings extend the Theory of Planned Behavior (TPB) by positioning perceived risk as a cognitive trigger within the decision-making process. The findings further suggest that halal skincare marketing should move beyond generic awareness-oriented messages towards transparent ingredient disclosure, accessible halal-certification verification, and credible product education. Nevertheless, the findings should be interpreted in light of the study's single-campus sample, cross-sectional design, potential self-report bias, and focus on purchase intention rather than actual behaviour. Future research should validate the proposed relationships across different countries, product categories, and generational groups using longitudinal designs to assess whether purchase intention translates into actual purchasing behaviour..

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